Operations Agreement

Between

ICESat Science Investigator-led Processing System (I-SIPS)

and

The National Snow and Ice Data Center (NSIDC) Distributed Active Archive Center (DAAC)

For Transfer of Geoscience Laser Altimeter System (GLAS) Data Products

Version 0.~~43~~

~~December 25, 2002~~January 28, 2003

Approved by:

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Change Information Page

ISSUE	DATE	PAGES AFFECTED	DESCRIPTION
Baseline v0.1		All	
v0.2	March 8, 2002	p. 5, Sec. 1.3	Noted that upon change to document, ops teams at ISIPS and NSIDC are notified of the change via email by the NSIDC ICESat/GLAS Team Lead.
“”	“”	p. 14, Sec. 4.2 Notification of Corrupt L0 Data from EDOS	Added this section to document.
V0.3	June 25, 2002	p. 15, Sec. 4.3 Transfer of L1, L2 and L3 data to NSIDC DAAC from I-SIPS	Change ORIGINATING_SYSTEM parameter name from “ISIPS” to “ICESAT” “ISIPS” is for L0 data transfer. “ICESAT” for L1+ data transfer.
“”	“”	p. 25, Sec. 7.3, Appendix C	Insert document # to better identify “I-SIPS-NSIDC ICD” And Replace GLAANC24 with new anc data type GLAANC04, in text above Table 7.2.
		p. 32, Sec. 7.6, New Appendix F	Add appendix to document how NSIDC, I-SIPS and GLAS science team will cooperate to answer user questions
V0.4	Dec. 2002	Sec. 4.1.2	Add 48 hrs notice prior to ip address change
“ ”	“ “	Sec 4.1, 4.2 and 4.3	If either NSIDC or ISIPS re-orders data from EDOS, both will receive data, whether they need it or not. So NSIDC and ISIPS will provide to each other L0 data, unless neither has it.
“ “	“ “	Title page and throughout doc.	Ruth Duerr’s title: NSIDC DAAC Operations Supervisor
“ “	“ “	Sec. 3.1 and 6.3.2	NSIDC Ops hours now 7 a.m. – 6 p.m.
“ “	“ “	Sec. 4.6.2	Clarify data deletion policy
“ “	“ “	7.7, App. G., Workoff plan	Delete
“ “	Jan. 03	7.1, App. A	Replace with new (10-29-02) file naming convention
“ “	“ “	Sec. 3.2	Update David’s and Jay’s email addresses
“ “	“ “	Sec. 2.2	Delete Security plan; note that config mngt plan is complete but w/o #.

“ “	“ “	App. C, Sec. 7.3	Update which anc files come with their own ESDTs, and which are in DAP

1 INTRODUCTION

~~1.1~~1.1 Purpose

The purpose of this document is to formalize the operational interface, document data exchange server information, and identify points of contact for key personnel to support transfer of the Geoscience Laser Altimeter System (GLAS) Level 1, 2 and 3 data from the Ice, Clouds & Land Elevation Satellite (ICESat) Science Investigator-led Processing System (SIPS), I-SIPS, to the National Snow and Ice Data Center (NSIDC) Distributed Active Archive Center (DAAC). I-SIPS and the NSIDC DAAC each receive Level 0 data directly from EDOS. The NSIDC DAAC provides replacement Level 0 data to I-SIPS, and vice versa, upon special request only, e.g., in cases in which either the DAAC or I-SIPS can't locate or access Level 0 data received from EDOS.

~~1.2~~1.2 Scope

All activities supporting the transfer of GLAS Standard Data Products from I-SIPS to NSIDC are within the scope of this Operations Agreement (OA), as are all activities supporting the transfer of Level 0 replacement data between NSIDC and I-SIPS. This agreement is effective for the duration of the ICESat/GLAS mission.

~~1.3~~1.3 Document Control

NSIDC and I-SIPS agree to coordinate changes to this agreement between and within their respective organizations. All changes to this document beyond the baselined version are noted within the Change Information Page. NSIDC and I-SIPS further agree to maintain supporting information as specified in this agreement. Changes to the procedures outlined in this document require agreement by both NSIDC and I-SIPS authorized representatives prior to implementation. Nominally changes require 30 days notice. If immediate changes are needed to resolve an ongoing operational problem, the document will be updated as soon as is feasible after the problem is resolved. The NSIDC ~~Data~~ DAAC Operations Supervisor and the I-SIPS Operations Manager are leads for changes to operational procedures. The NSIDC ICESat/GLAS Team Lead updates this operations agreement as needed. Upon a change to this document, the NSIDC ICESat/GLAS Team Lead sends an email to both parties' operations teams, e.g., ops@isipspr1.nascom.nasa.gov for ISIPS and ops@nsidc.org for NSIDC. See Tables 3-1 3-2, 4-2 and 4-3 for contact information.

2 RELATED DOCUMENTATION

The documents referenced in this section help define this operations agreement or provide background information relevant to this agreement.

2.1 Applicable Documents

The following documents are referenced herein or are directly applicable to this document. In the event of conflict between any of these documents and this document, this document shall take precedence.

423-41-57-11 Interface Control Document between the EOSDIS Core System (ECS) and the Science Investigator-Led Processing Systems (SIPS) Volume 11: ICESat Science Investigator-Led Processing System Data Flows

423-41-57 Interface Control Document Between the EOSDIS Core System (ECS) and the Science Investigator-Led Processing System (SIPS), Volume 0, Interface Mechanisms, March 2000, Revision B

423-ICD-EDOS/EGS Interface Control Document Between the Earth Observing System (EOS) Data and Operations System (EDOS) and the EOS Ground System (EGS) Elements

510-OA-EDOS/SDPS Operations Agreement between the Earth Observing System (EOS) Data and Operations System (EDOS) and the EOS Data and Information System (EOSDIS) Core System (ECS) Science and Data Processing Segment (SDPS)

2.2 Information Documents

~~TBD I-SIPS Security Plan~~

~~TBD~~Complete. No # assigned. ~~—~~SIPS Configuration Management Process Definition

423-36-01 Interface Control Document (ICD) Between Earth Observing System (EOS) Missions SupportNetwork (EMSn) and ICESat Science Investigator-led Processing System (ISIPS)

423-41-02 Functional and Performance Specification for the Earth Observing System Data and Information System (EOSDIS) Core System

ICES-401-SPEC-002 Mission Operations Requirements Document (MORD) for the Ice, Clouds & Land Elevation Satellite (ICESat)

3 Overview

This section describes the organizational relationship between the NSIDC DAAC and I-SIPS and the data interfaces between them. It also provides a list of key personnel.

3.1 Organizational Relationships

The ICESat SIPS is located at NASA Goddard Space Flight Center (GSFC) in Greenbelt, MD. The NSIDC DAAC is located on the University of Colorado campus in Boulder. I-SIPS maintains 12x5 operational staffing, excluding holidays. NSIDC currently maintains 11~~8~~x5 operational staffing, excluding holidays. This agreement documents the interfaces, processes, and operational requirements between I-SIPS and NSIDC.

3.2 Ice, Clouds & Land Elevation Satellite (ICESat) Science Investigator-led Processing System (SIPS)

The GLAS data processing is performed by the Ice, Clouds & Land Elevation Satellite (ICESat) Science Investigator-led Processing System (SIPS). See Appendix A for data file naming convention.

I-SIPS receives the GLAS Level 0 data from the EOS Data and Operations System (EDOS), as specified in the Interface Control Document (ICD) between EDOS and EGS (423-ICD-EDOS/EGS).

I-SIPS produces Level 1, 2 and 3 data products. All Level 1 (L1), Level 2 (L2) and Level 3 (L3) data products are transferred to the NSIDC DAAC for archival, as specified in this document.

I-SIPS produces the L1, L2 and L3 data products using algorithms developed by the United States GLAS Science Team members. The L1 and L2 products are generated in binary integer format, whereas the L3 and L4 (if any) are generated in HDF-EOS file format or another agreed-to format.

I-SIPS has implemented a process to provide the Nominal Orbital Spatial Extent (NOSE) information as required by ECS to spatially locate the GLAS data. See Appendix D for details of NOSE and its implementation for off-nadir pointing.

~~3.3~~3.3 National Snow and Ice Data Center Distributed Active Archive Center

The NSIDC DAAC receives from I-SIPS the GLAS L1, L2 and L3 data products. NSIDC archives these products and their associated metadata, browse, and Delivered Algorithm Packages (DAPs) in the ECS. See Appendix B for contents of DAPs. NSIDC advertises and makes these items available to the broader scientific community.

Table 3-1 lists contact information for key project personnel for the I-SIPS. Table 3-2 lists contact information for key personnel for the NSIDC DAAC. Primary Points of Contact (POC) for both organizations are listed separately in Section 4.2.

Name	Responsibility/Title	Email Address	Telephone
David Hancock	I-SIPS Project Manager	David.W.Hancock@nasa.gov ~~david.hancock@gsfc.nasa.gov~~	757- 824-1238
Anita Brenner	I-SIPS Deputy Project Manager	Anita.Brenner@gsfc.nasa.gov	301-614-5914
Jay Zwally	ICESat Project Scientist	H.J.Zwally@nasa.gov ~~jay.zwally@gsfc.nasa.gov~~	301-614-5643
Bob Schutz	GLAS Science Team Leader	schutz@csr.utexas.edu	512 471 4267
Suneel Bhardwaj	I-SIPS Operations Management	suneel.bhardwaj@gsfc.nasa.gov	301-286-4941
John DiMarzio	ICESat Systems Administrator	John.p.dimarzio@gsfc.nasa.gov	301-614-5893
John Bay	SMDS software lead	John.bay@gsfc.nasa.gov	301-286-5034
John Shepherd	I-SIPS Systems Administrator	john.w.shepherd@gsfc.nasa.gov	301-286-5124

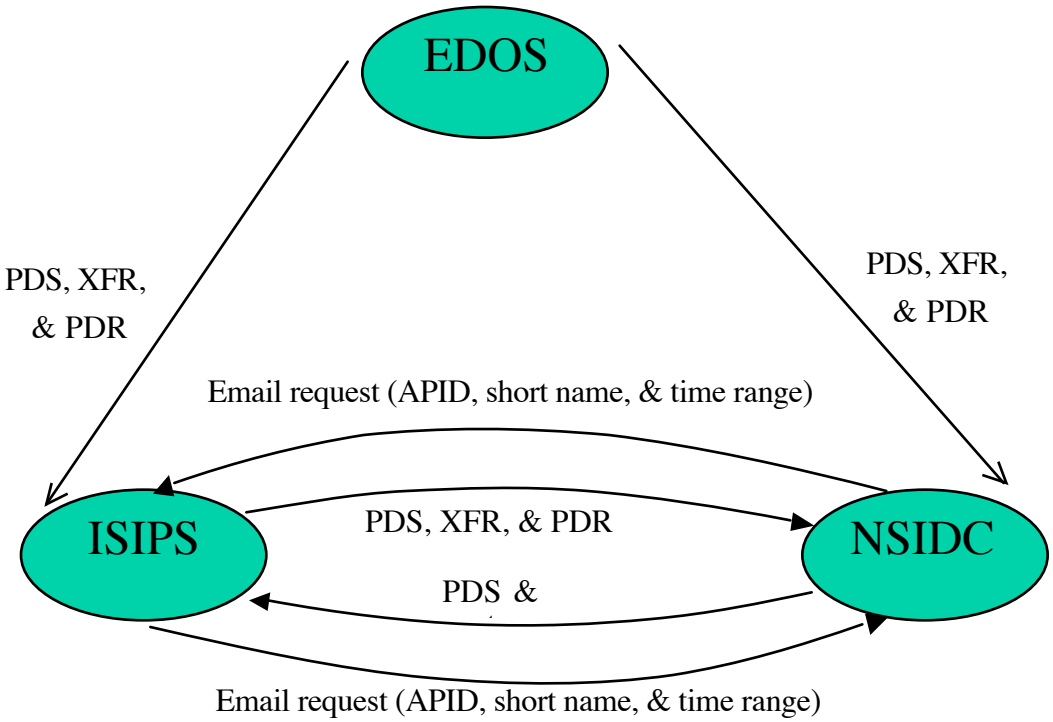
Table 3-1. I-SIPS Key Personnel

Name	Responsibility/Title	Email Address	Telephone
Melinda Marquis	NSIDC ICESat/GLAS Team Lead	marquism@nsidc.org	303-492-2850
Vince Troisi	NSIDC Deputy DAAC Manager	troisi@nsidc.org	303-492-1827
Ruth Duerr	NSIDC ~~Data~~ DAAC Operations ~~Supervisor~~Supervisor	rduerr@nsidc.org	303-735-0136
Doug Fowler	ECS Interface Test Engineer	dfowler@nsidc.org	303-735-1357
Rick Pitre	ECS Software Integration and Test Engineer	rpitre@nsidc.org	303-492-5849
Siri Jodha Singh Khalsa	NSIDC DAAC ECS Science Coordinator	sjsk@nsidc.org	303-492-1445
Donna Scott	NSIDC User Services Representative	nsidc@nsidc.org	303-492-6199

Table 3-2. NSIDC Key Personnel

4 Data Exchange

4.14.1 L0 Replacement Data Exchange between NSIDC DAAC and I-SIPS



Note: PDS refers to both the science granule and construction record

Figure 4-1. L0 Replacement Data Overview

EDOS sends L0 data directly to ECS at the NSIDC DAAC and directly to I-SIPS. EDOS sends the L0 data to both locations in the form of 32 separate APIDS, each having its own Earth Science Descriptor Type (ESDT) descriptor file. These APIDs are listed in Section 8 of the ICD between EDOS and EGS, #423-ICD-EDOS/EGS. If either party, i.e., NSIDC or I-SIPS, loses or can't access L0 data received from EDOS, either can replace the lost data by special request from the other party. This special request takes the form of an email message. See Figure 4-1 for an overview of the process. L0 data ~~that are over 30 days old~~ can be replaced more easily by contacting the other party (NSIDC or I-SIPS), rather than EDOS, and thus NSIDC and I-SIPS should contact each other to replace any missing data ~~older than 30 days~~. ~~L0 data that are no more than 30 days old should be replaced by EDOS.~~Only if the other site is also missing the data, should EDOS be requested to replace the data (see section 4.3 Reordering Data from EDOS).

The OA between EDOS and the ECS and SDPS (510-OA-EDOS/SDPS), particularly Appendix D, documents procedures for re-ordering data from EDOS and what actions should be fulfilled beforehand.

~~4.1.1~~ 4.1.1 Transfer of L0 Replacement Data from NSIDC to I-SIPS

When I-SIPS requires L0 data from NSIDC, I-SIPS initiates the request via email to the NSIDC User Services. Each email request should contain the following subject line:

Subject: I-SIPS Request for GLAS Level 0 Replacement Products

The body of the email message contains the information NSIDC DAAC uses to place the order for I-SIPS. The body of the email message includes the ESDT short name and APID for the data collection, and a list of temporal ranges for each of the requested data products. All dates and times are Greenwich Mean Time (GMT). Requests for data from an ESDT collection contain one or more time ranges. All data files that fall within the individual time ranges for each of the requested data collections are transferred. Data are transferred by FTP push. Data are pushed to the "incoming" directory. In special instances, e.g., large volume of data need to be transferred, physical media (CD or DVD) can be used. A sample email message is depicted in Figure 4-2.

Date: Wed Apr 26 12:18:37 2001
From:
To: nsidc@nsidc.org
Subject: I-SIPS Request for GLAS Level 0 Replacement Products
Data Set: GLA0CHT1 (APID 20)
Start Date: 2001-04-01
Start Time: 00:00:00
Stop Date: 2001-04-01
Stop Time: 12:00:00
Start Date: 2001-04-02
Start Time: 11:00:00
Stop Date: 2001-04-02
Stop Time: 16:00:00
Data Set: GLA0CHT2 (APID 21)
Start Date: 2001-04-01
Start Time: 00:00:00
Stop Date: 2001-04-01
Stop Time: 10:00:00
Start Date: 2001-04-02
Start Time: 17:00:00
Stop Date: 2001-04-02
Stop Time: 23:00:00

Figure 4-2. Example email request from I-SIPS to NSIDC for replacement L0 data

Upon receipt of the email request from I-SIPS, a member of the NSIDC DAAC staff enters the request into the system using the EDG. An email confirming that the order has been entered into the system is sent to I-SIPS (Appendix E, Figure 1). A second email is sent to I-SIPS with a notification that the order has been completed and instructions for accessing the data (Appendix E, Figure 2).

~~4.1.2~~ 4.1.2 Transfer of L0 Replacement Data from I-SIPS to NSIDC

If NSIDC requires L0 data from I-SIPS, NSIDC sends to I-SIPS an email request specifying the L0 data it needs, i.e., ESDT short name, APID, and a list of temporal ranges for each of the requested data products. I-SIPS then stages the data to the external polling directory. I-SIPS will then notify NSIDC operations of available data via email. NSIDC then activates its polling server configured for this L0 replacement data transfer. Once the polling server has pulled the data, the ECS system ingests the data. As under nominal conditions, Product Acceptance Notifications (PANs) are sent to I-SIPS notifying them that the data have been ingested successfully.

See Table 4-1 for I-SIPS host-specific information. ~~If an IP address changes, both parties will be notified of the change in a timely fashion, via email or telephone.~~If a host's IP address is to be changed, the party making the change must notify the effected parties at least 48 hours in advance by email. When the change is complete, the party making the change should contact the other party as soon as possible by telephone, so that the other party can reconfigure their hosts to recognize the new IP address.

Parameter	Value
Host IP address	(This is provided in the PDR.)
Account	nsidc
Directory	/external/nsidc/outgoing/L0
Originating System	ISIPS

Table 4-1. Parameters for L0 replacement data exchange

~~4.2~~ 4.2 Notification of Corrupt L0 Data from EDOS

If either NSIDC and/or ISIPS receives corrupt data from EDOS, NSIDC and ISIPS notify each other via email. ISIPS is responsible for determining whether L0 data sent by EDOS is corrupt. However, if NSIDC is unable to ingest L0 data, or if NSIDC notes that a file size is incorrect, NSIDC notifies ISIPS of this. Once notified that corrupt L0 data have been received by NSIDC or ISIPS, the party being notified checks the corresponding L0 data received from EDOS and notifies the other party whether the L0 data they received are corrupt also. If only one site received corrupted data, the procedures in section 4.1 should be used to request replacement data from the other site. Otherwise, the party who detected the corruption should reorder the data from EDOS (see Section 4.3).

~~Each party receiving corrupt L0 data is responsible for re-ordering the data from EDOS.~~ Corrupt data are reported via email. The email message contains the date, file name, and a description of the problem~~, and whether data have been re-ordered from EDOS~~. The message should contain additional information needed to document the problem. The email messages are sent by and to both parties' operations teams, e.g., ops@isipspr1.nascom.nasa.gov for ISIPS and ops@nsidc.org for NSIDC.

4.3 Reordering Data from EDOS

Due to the design of the EDOS system, any time either NSIDC or I-SIPS reorders data, the resulting data products will be sent to both parties. Consequently, data will only be reordered from EDOS when both NSIDC and I-SIPS need the data. The data coordination needed to determine this will be provided via email between operations teams. During this email exchange, one of the parties will be designated to place the EDOS reorder request. Once the request has been placed, a notification email will be sent to the other party [Melinda – Do we need to define an message format? NSIDC does not currently have any tools to ingest/track such a message].

The EDOS reorder system allows requests to be prioritized. Since the I-SIPS processes the data, NSIDC has agreed that I-SIPS should reprioritize the reorders as needed using the tools provided by the EDOS system.

~~4.3~~ 4.4 Transfer of L1, L2 and L3 data to NSIDC DAAC from I-SIPS

The I-SIPS uses the ECS-specified Product Delivery Record (PDR) based data transfer scheme with the ORIGINATING_SYSTEM parameter name ICESAT for delivering science data granule products, metadata, browse data, and algorithm packages to the ECS at the NSIDC DAAC. Using this scheme, I-SIPS first stages the data, browse, and associated metadata to the I-SIPS PDR server. The I-SIPS then places a PDR on the I-SIPS PDR server to inform the polling server at NSIDC of the availability of the data. The ECS at NSIDC polls the I-SIPS PDR server to learn of the presence of PDRs for NSIDC. The polling frequency is operator configurable. The ECS at NSIDC polls the I-SIPS PDR server to learn of the presence of PDRs for NSIDC. The ECS ingest polling server at NSIDC processes the PDRs to identify the data placed by the I-SIPS for NSIDC on the PDR server. NSIDC uses FTP pull operations to ingest the data.

NSIDC sends, via FTP push, Product Acceptance Notifications (PANs) to I-SIPS for each PDR received from I-SIPS that was successfully parsed. Upon receipt of a PAN containing granules with "disposition=successful," I-SIPS removes the corresponding PDR; as noted in Section 4.3, I-SIPS will only infrequently remove data, browse, and metadata from their PDR server. If there were unsuccessful granules in the PAN, I-SIPS will work with NSIDC as appropriate to resolve the problem. Once the problem is resolved, I-SIPS will generate a new PDR for redelivery of the science data granule products,

metadata, browse data, and algorithm packages that had previously been unsuccessfully transferred.

NSIDC also sends, via FTP push, Product Delivery Record Discrepancies (PDRDs) to I-SIPS. The PDRD is sent by NSIDC to alert I-SIPS that the submitted PDRs could not be successfully parsed during processing by NSIDC. The I-SIPS operator takes action to correct the failed PDR and replaces it on the PDR server. Then the process begins anew with NSIDC determining the presence of a new PDR. Specific details of the ECS PDR-based data transfer interface are found in Section 4.5 of GSFC Document 423-41-57, Volume 0 of the ICD between the ECS and SIPS and in Section 3.3 of GSFC Document 423-41-57, Volume 11 of the ICD between the ECS at NSIDC DAAC and I-SIPS.

4.4 4.5 Nominal Operations

I-SIPS stages L1, L2 and L3 data products and related files on the I-SIPS PDR server. Specific details on the transfer of data from I-SIPS to NSIDC are described in Section 3.3 of Document 423-41-57-11, Volume 11 of the ICD between the ECS and I-SIPS. A metadata file accompanies each data granule. In general, browse files are delivered in the same PDR as the data granules to which they refer. Delivered Algorithm Packages (DAPs) are provided for L1, L2 and L3 data by I-SIPS to NSIDC, whenever a science processing algorithm or associated ancillary data set changes. See Appendix C for a list of ancillary files and their contents that are delivered in DAPs from I-SIPS.

Table 4.5-2 in ICD Volume 0 (423-41-57) states that the total number of files listed in a PDR (TOTAL_FILE_COUNT parameter) must fall in the range 1-9999. A related constraint on the PDR is that it is limited to a size of 1 MB. (Section 4.5.3 b. in the ICD Volume 0 (423-41-57). By mutual agreement between NSIDC and I-SIPS, ISIPS will package the granules in a single PDR in a logical way, e.g., all 56 granules of a given data product for a day. Any sensible, logical organization is acceptable. Approximately 50 granules are listed in a given PDR; this is a goal, not an inflexible constraint, for the purpose of maximizing efficiency of ingest at NSIDC. The I-SIPS system checks that all constraints are met prior to staging the data for NSIDC ingest.

After the data have been successfully transferred to the ECS, the metadata file that accompanies the data granule is parsed and the information describing the data granule is stored in a database residing on the Science Data Server.

ISIPS plans not to age off data from its PDR server frequently. Because of the infrequency of ISIPS' deleting data from its PDR server, NSIDC should not be affected by such activity. If ISIPS decides in the future to age off data more frequently, then ISIPS and NSIDC leads will coordinate a schedule to ensure the NSIDC retrieves data before ISIPS deletes them; this policy will be documented in this operations agreement.

See Document 423-41-57-11 (ICD between ECS and SIPS, volume 11, I-SIPS), Tables 5.4, 5.5, and 5-6 for details of specific products, their delivery frequencies and volumes, delivered by I-SIPS to NSIDC.

When I-SIPS determines that a new ESDT is to be produced or that an existing ESDT is to be revised, I-SIPS works with the NSIDC DAAC Science Coordinator to develop specifications for the required changes. These specifications are then transmitted to the ECS Science Office, where a new ESDT descriptor file is prepared to these specifications. The ECS Science Office then delivers to I-SIPS a new Metadata Configuration File (MCF). I-SIPS produces test data and new .met files using this MCF and sends these back to the Science Office for testing. When testing is complete, the new ESDT is delivered to the

DAAC. I-SIPS uses this MCF in the production of new data and new .met files using this MCF and sends these to the DAAC. The DAAC operator then attempts ingest of these test granules and reports success or failure to I-SIPS.

~~4.5~~ 4.6 Unique and Off-nominal Operations

This section describes operational scenarios that may require human intervention to restore data, and the order in which data are ingested to resume normal operations.

Table 4-2 lists primary points of contact (POCs) for data exchange at I-SIPS. Table 4-3 lists primary points of contact (POCs) for data exchange at NSIDC.

Name	Responsibility	Email Address	Telephone
Suneel Bhardwaj	I-SIPS Operations Manager	Suneel.bhardwaj@gsfc.nasa.gov	301-286-4941
Email alias for operations staff		ops@isipspr1.nascom.nasa.gov	
Email alias for sys. admin. staff		sa-isips@isipspr1.nascom.nasa.gov	
John Shepherd	I-SIPS Systems Administrator	john.w.shepherd@gsfc.nasa.gov	301-286-5124
John Bay	SDMS Lead Programmer	bay@icesat2.gsfc.nasa.gov	301-286-5034

Table 4-2. I-SIPS Data Exchange POCs

Name	Responsibility/Title	Email Address	Telephone
Ruth Duerr	NSIDC ~~Data~~ DAAC Operations Supervisor	rduerr@nsidc.org	303-735-0136
Renea Ericson	Raytheon Project Manager at NSIDC	ericson@colorado.edu	303-492-1030
Email alias for operations staff		ops@nsidc.org	New ph# TBD
Lisa Monroe-Cline	Network Systems Administrator	lmonro@nisdc.org	303-492-6908
Email alias for sys. admin. staff		sa-ecs@nsidc.org	

Table 4-3. NSIDC Data Exchange POCs

~~4.5.1~~ 4.6.1 Transfer and Ingest Interruptions

A failure of any function required to transfer or ingest GLAS L1, L2, or L3 data products from I-SIPS into the ECS at NSIDC may require coordination between NSIDC and I-SIPS, to ensure that proper arrangements are made to solve the problem.

Once the transfer or ingest interruption is resolved, the nominal scenario is to restore near real time ingest first and recoup missing data second, starting with the oldest data and continuing forward in time until all data are ingested. Possible interruptions include:

- No new products appearing on the PDR server for over 36 hours between Monday and Friday
- Consistent errors in PDRs (incorrect format, designated files absent, etc.)
- Products consistently fail to insert (incorrect metadata)

~~4.5.2~~ 4.6.2 Routine and Infrequently Reprocessed Data

When data are reprocessed because of algorithm updates, I-SIPS provides to NSIDC a new DAP for the new algorithm(s). I-SIPS notifies NSIDC in advance, as early as is practical, that reprocessing will be occurring, so that NSIDC can plan the installation of the new ESDTs for the reprocessed data.

In the event of science algorithm changes, current data are ingested and archived as expeditiously as possible. Reprocessing, ingest and archival of previously-processed data is a secondary priority.

~~However, mutual agreement among representatives of ESDIS, I-SIPS and NSIDC will determine if and when data are deleted from the NSIDC DAAC archive. NSIDC DAAC will retain higher priority data and delete lower priority data, if deletion of some data is required. Data that are archived at an additional location, e.g., at the I-SIPS facility, would be, in general, lower priority than data that aren't archived anywhere besides at NSIDC DAAC.~~

~~NSIDC does not plan to delete L1 and higher level data products unless they have been reprocessed. If L1 and higher level products have been reprocessed, then the older versions~~

~~will be deleted, after mutual agreement among representatives of ESDIS, I-SIPS and NSIDC.~~

The ESDIS Project requirements used for sizing the DAAC archives are discussed in Table C-3 in Appendix C of the Functional and Performance Requirements for the Earth Obsering System data and Information System (EOSDIS) Core System. The text describing the contents of Table C-3 indicates the higher level GLAS products (L1-L3) are retained in the archive unless the products are replaced by a new version. Approximately six months after I-SIPS generates a new version of the product, the data are deleted from the archive. NSIDC, in collaboration with the I-SIPS, will develop a schedule for deleting products that have aged six months after being replaced by the newer version of the product.

~~5~~ 5 System Management and Administration

This section describes plans and processes related to operations maintenance and troubleshooting activities.

~~5.1~~ 5.1 Notification of System Down-time and Maintenance Activities

Planned maintenance activities and other interruptions to routine processing, at either end of each interface, are reported to the appropriate POCs at the other site, if the activity will affect operations there. Two workdays advance notice for planned activities and notification for unplanned downtimes are provided on a best-effort-basis by each party. Wide dissemination of these communications is encouraged, to minimize the impact of delay due to personnel outages. An e-mail alias of operations personnel is maintained at both sites for this purpose; see Section 4.6~~4~~.

~~5.2~~ 5.2 Hardware and Network Communications Troubleshooting

NSIDC and I-SIPS work together to resolve any hardware or network communications problems. As soon as a problem or failure is detected, the problem is reported through the local site's problem tracking system and via e-mail or phone to the counterpart(s) at the other site (NSIDC or I-SIPS). Wide dissemination of these communications is encouraged, to minimize the impact of delays that could result from personnel being absent.

6 Security

According to ESDIS security policy, NSIDC takes steps to ensure the highest appropriate level of computer and information security. This includes adherence to NASA security bulletins, installing vendor patches in a timely manner, and system monitoring. This section discusses some specific I-SIPS and NSIDC security features.

The I-SIPS is a NASA-supported data system and, as such, takes steps to ensure the highest appropriate level of computer and information security. This includes adherence to NASA security policies and guidelines (including the NASA Procedures and Guidelines 2810) as documented in the I-SIPS Security Plan.

~~6.1~~ 6.1 NSIDC Login -Account and Passwords

The I-SIPS maintains a restricted FTP account for NSIDC on the ICESat server. I-SIPS configures the account so that NSIDC can read (FTP Pull) PDRs and data files residing on the Production Data Record Server and write (FTP Push) all PANs and PDRDs, regardless of product level, into a single directory, /external/nsidc/incoming. I-SIPS System Administrators change the password on the restricted FTP account upon request by NSIDC operations personnel, or if this account is compromised. I-SIPS configures the account such that the password is not planned to age. The NSIDC operations supervisor is notified of the new password via an encrypted e-mail attachment (e.g., PGP) or by phone. The encryption software is determined after consultation between the I-SIPS and NSIDC personnel.

~~6.2~~ 6.2 Security Patches

NSIDC and I-SIPS System Administrators monitor NASA and industry security notifications and take steps to ensure that systems are protected from unauthorized access. Security patches are installed as soon as practical upon notification, which may sometimes necessitate unplanned system outages. NSIDC and I-SIPS work together to minimize the impact to their respective operations.

~~6.3~~ 6.3 Product Quality Assurance

I-SIPS produces the L1, L2 and L3 data products and delivers them immediately to the Science Computing Facility (SCF) for review. Approximately one week after production, ISIPS sends the data products to NSIDC, if the SCF has not provided the ISIPS with QA failure information. If the quality of any data becomes suspect, I-SIPS requests that NSIDC change the QA flags as directed via email. It is expected that the QA Metadata Update Tool (MUT) will be working and available for this procedure by the time ICESat launches.

~~6.3.1~~ 6.3.1 Science Quality Assurance

The GLAS science team performs science quality assurance of the GLAS data products. The science team will peruse the browse products and run other appropriate tests as required to assess the science quality of the data. After approximately seven days, if the science team has not notified I-SIPS of problems, the data will be sent to NSIDC with the science quality QA flags set to automatic QA passed. If within six days, the science team finds problems with the data, they will notify the I-SIPS either not to release the data to NSIDC or to set the science quality QA flag appropriately. If the science team finds problems after the data have been released to NSIDC, then the science quality flag of the delivered data will need to be updated appropriately; I-SIPS will request, via email, NSIDC to change the QA flags.

~~6.3.2~~ 6.3.2 Operational Quality Control (QC) at NSIDC

All GLAS ingest and archival are monitored by operations staff during normal operation hours (Mon. – Fri., ~~7~~8 A.M. to ~~6~~5 P.M.). The monitoring is completed with the use of the ECS GUIs and scripts. Once an operations staff member identifies something abnormal, she or he follows the procedures outlined in Section 4.4 of this document. All of the problems identified by the operations staff are logged in a local resource log.

EDOS performs Reed-Solomon checks on the telemetry. EDOS identifies corrections to the packets and errors detected. The PDS Construction Record documents these details.

NSIDC relies on EDOS to perform significant checking of the data before they send it to NSIDC. NSIDC does not perform check sums. NSIDC performs the following basic procedure: If the granule ingests successfully, then the data are assumed to be OK unless NSIDC learns otherwise. Further, if the file size NSIDC tries to ingest doesn't match the file size EDOS sent NSIDC (the latter being noted in the PDR), then the data wouldn't be ingested. NSIDC would then re-order the data and notify I-SIPS. If I-SIPS receives defective L0 data from EDOS, I-SIPS notifies NSIDC.

I-SIPS will send email notification of defective L0 data to NSIDC reps: marquism@nisdc.org, and ops@nsidc.org.

NSIDC will send email notification of defective L0 data to I-SIPS reps: Suneel.bhardwaj@gsfc.nasa.gov, ops@isipspr1.nascom.nasa.gov, and bay@icesat2.gsfc.nasa.gov.

The email should contain, at a minimum, the following information.

Date:
From:
To:
Subject: Defective L0 GLAS data from EDOS
File name:
Error/problem:
Solution:
Status:

~~6.3.3~~ 6.3.3 Operational Quality Control (QC) at I-SIPS

Operational quality assurance will be completed at I-SIPS automatically on every granule to assure the products are the appropriate size and to indicate granules that contain suspect data. If the suspect granules are caused by operational problems, then they will not be sent to NSIDC, but be recreated after the operational problems have been fixed.

7 Appendices

7.17.1 Appendix A: File naming convention used by I-SIPS for GLAS Data Products

Track dependent products processed at ISIPS (GLA01-15; and corresponding png files, qap products, v and v files, and metadata files:)

GLAxx_mmm_prkk_ccc_tttt_s_nn_ffff.eee

Where eee is dat for GLA01-15 and eee is hdf(Caps or little?) for GLA16; qap for corresponding qap file; png for corresponding non-hdf browse files; vav for corresponding validation and verification file; met for metadata files

Note that the multiple file pngs for GLA01, 02, 03 and 05-15 will use the ffff to denote the different files

For GLA04 which already uses ffff for the multi-file product granule, there is currently no browse product defined. We will define a browse with a constraint to keep it to one file per file.

Consolidated HDF browse product – one per GLAxx product file created by image-magic.

GLAxx _mmm _prkk_ccc_tttt_s_nn_dddd_ffff.eee

Where dddd = brws and eee = hdf ; since this files is never read by any GSAS utility can it not have a unique naming convention?

Time dependent GLA and ANC granules: (GLA00, dynamic ANC time dependent files except for ANC06 (log file),
GLA00_mmm_yyyymmdd_hhmmss_nn_**ffff.**eee and
ANCxx_mmm_yyyymmdd_hhmmss_nn_ffff.eee

Where eee is always dat, xx is the corresponding ANC file number

yyyymmdd_hhmmss is the date_time of the first data point in the file

for GLA00 the **ffff** has to have a one to one correspondence with the APID number. It the apid number is **less than 4 digits then the unused portion of the ffff filed will be set to 0. The numbers will be filled in from the right most 'f' field, i.e. apid 26 will be denoted as 0026.**

Static Ancillary files required for processing (ANC)
ANCxx_mmm_nn_ffff.eee

Where eee is always dat, xx is the corresponding ANC file number

ANC39 GPS data the file name external input and output will be

the naming convention is:

□□□CExdddf.yyo

Where x is where 1 refers to FM-1 and □2 refers to□CE2 for FM-2

, ddd is day of the year, f is file number for this day (f=0,1,2,...), yy is year minus 2000, and o (letter) means "observation" file.

log files, ANC06

ANC06_mmm_yyyymmdd_**gggggg**_nn_pgename.txt

yyyymmdd is the creation date

Control files

CTL_mmm_yyyymmdd_**gggggg**_nn_pgename.**ctl**

Where yyyymmdd is the creation date

SCF QA files

SCFQA_mmm_yyyymmdd_iiiiii_nn.txt

Where yyyymmdd is the creation date

Where:

xx: Type ID number (CCB assigned number within a specific GLA or ANC series)

p: repeat ground track phase

r: reference orbit number

kk: instance # incremented every time we enter a different reference orbit

ccc: cycle of reference orbit for this phase

tttt: track within reference orbit

s: segment of orbit – this is 0 on files that contain multiple segments to include GLA02, GLA03, GLA04,GLA07-GLA15 and 1,2,3,or4 on GLA01, GLA05, and GLA06

yyyymmdd – starting date in year, month, and day of month or creation date (see above)

hhmmss – starting time hour, minute, second

mmm: release number for process that created the produce (CCB assigned-combination of software and data)

nn granule version number (the number of times this granule is created for a specific release)

iii: counting sequence number (incremental sequence per day for each instance of a process specific ANCxx or GLAxx)

ffff: file type (numerical,CCB assigned for multiple files as needed for data of same time period for a specific ANCxx or GLAxx, .i.e. multi-file granule)

eee: descriptor telling whether data product, browse product, quality assurance product, validation and verification output.

valid eee values are dat, png, hdf, qap, vav, and met

dddd: 'brws' denotes consolidated multi-png file browse product in hdf

gggggg: job id number – number of digits may change.

pgename: GLAS_ATM, GLAS_L0P, met_util, GLAS_L1A, GLAS_Meta, ATM_ANC, met_util, GLAS_ALT, QABROWSE, ExtractRev

NOTE: All filenames generated by SDMS will be in caps.

Definition of Orbit parameters:

Pass ID = prkkccctttt

Where

Repeat ground track phase, p

P=1 for 8-day

P=2 for 183-day

P=3 for transfer orbit

Reference orbit number, r

This number,r, will start at 1 and increment each time we receive a new reference orbit groundtrack file

Instance # kk, kk will increment by one every time we change from one reference orbit to another one.

Cycle, ccc, the cycle number will restart at 1 every time the instance number, kk, changes. The cycle number will then increment within the instance every time track 1 for that orbit is reached. Note that most instances will begin in an arbitrary track (not 1) because of how we are numbering the tracks.

Track, tttt, Tracks are defined from a reference orbit. Each track begins and ends at the ascending equator crossing. Tracks will be numbered such that track number one is the closest track to Grenwich from the east and then contiguous in time after that.

For transfer orbits, for which we have no predefined reference orbit, track 1 is the first track for which we have data for that instance, k.

Repeat ground track phase, p	Ref orbit #	Instance	Beg time mm/dd/yy yy hhmmss	End time	Beg track #	# tracks per cycle	Beg rev #	Track file name	
1	1	1	1/20/2002 011540	8/1/2002 194302	50	121	1	Tf1	
3	2	2	8/1/2002 194302	8/2/2002 062130	1		2380	Tf2	
2	3	3	8/2/2002 062130	8/2/2004 032458	1200	2200	2396	Tf3	
3	4	4	8/2/2004 032458	8/3/2004 201408	1		13013	Tf4	
1	5	5	8/3/2004 201408	9/3/2004 221506	43	121	13028	Tf5	
3	6	6	9/3/2004 221506	9/5/2004 051358	1		13178	Tf6	
2	3	7	9/5/2004 051358	1/6/2007 221345	534	2200	13207	Tf3	

The above table shows what may happen for this mission. The altimeter is turned on after we have achieved the 8-day cal/val groundtrack, so this is p=1, r=1, kk=1, and we use track file tf1 to define track numbers for this. On 8/1/2002 at 194302 we are no longer within the tolerance of that reference orbit as defined by UTCSR and we are in a transfer orbit, so p=3, r=2, and instance,kk=2. Then when we get to within tolerance of our 183-day mission groundtrack, p=2, r=3, kk=3. Then we decide to transfer to an 8-day repeat on 8/3/2004 but it is not the same groundtrack as the cal/val 8-day repeat, so for the transfer orbit, p=3,r=4,kk=4 and for the new 8-day repeat starting on 9/3/2004, p=1,r=5,kk=5. We then go through another transfer orbit, p=3,r=6,kk=6, and return to the mission 183 day repeat, so p=2,r=3,kk=7 until the instrument is turned off.

~~***(David, have you decided which, if any, of the suggestions discussed at the May 15 ad hoc file naming convention telecon with NSIDC you'll be implementing? Please edit this section as needed. For instance, we discussed:~~

~~1. a) Adding date and time to track dependent files:~~

~~GLAxx_mmm_yyyymmdd_hhmm_ etc.~~

~~b) Removing seconds from time dependent files for consistency:~~

~~GLAxx_mmm_yyyymmdd_hhmm_.etc.~~

~~2. Condensing the file name section _pr_kkcccc_tttt_s_.)***~~

~~Track dependent products processed at I-SIPS (GLA01-3,05-15;BRW,QAP)~~
~~HHHxx_mmm_pr_kkcccc_tttt_s_nn_ff.eee~~

~~Time dependent products: (GLA00 and GLA04, dynamic ANC,~~
~~HHHxx_mmm_yyyymmdd_hhmmss_nn_ff.eee~~

~~Process specific input or output automatically created and not covered under other catagories (control files, log files, SCF qa)~~
~~HHHxx_mmm_yyyymmdd_iii.eee (HHH – type of job, SCF, ING, PRO, DIS, eee type of file .ctl for control .log, .dat~~

~~Times for process specific files are processing date~~

~~Static Ancillary files required for processing (ANC)~~
~~HHHxx_mmm_nn_ff.eee~~

~~Where:~~

~~HHH: Type identification – GLA, ANC, SCF, BRW, QAP, ING, …~~

~~xx: Type ID number (CCB assigned number within a specific HHH)~~

~~p: repeat ground track phase~~

~~r: reference orbit number~~

~~kk: instance # incremented every time we enter a different reference orbit~~

~~ccc: cycle of reference orbit for this phase~~

~~tttt: track within reference orbit~~

~~s: segment of orbit~~

~~yyyymmdd – starting date in year, month, and day of month~~

~~hhmmss – starting time hour, minute, second~~

~~mmm: release number for process that created the produce (CCB assigned combination of software and data)~~

~~nn granule version number (the number of times this granule is created for a specific release)~~

~~iii: counting sequence number (incremental sequence per day for each instance of a process specific HHHxx)~~

~~ff: file type (numerical,CCB assigned for multiple files as needed for data of same time period for a specific HHHxx, .i.e. multi-file granule)~~

~~eee: file extension – dat, scf, hdf,eds,pds,met, ctl …~~

~~L0 from EDOS~~

~~fooooooottttttthhhhhhhddddddddddddiuu.eeee~~

~~Where~~
~~f is E (for EDS) or P (for PDS) 1byte~~
~~ooooooo: First APID in data set (SCID 3 bytes, APID 4 bytes)~~
~~ttttttt: Second APID in data set (SCID 3 bytes, APID 4 bytes)~~
~~hhhhhhh: Third APID in data set (SCID 3 bytes, APID 4 bytes)~~
~~ddddddddddd: creation GMT/ZULU time 11 bytes~~
~~i: numeric identification (0-9) 1 byte~~
~~uu: Unique file number (00-99) 2 bytes~~
~~eeee: File naming extension PDS or EDS 4 bytes~~

~~7.2~~ 7.2 Appendix B: Content of DAPs

A new DAP is delivered to ECS at the NSIDC DAAC whenever any item listed in Table 7-1 has been modified by I-SIPS.

Description
Data Coefficients Files
Test Data (includes control files)
Expected Test Results
Software Version Description
Software Requirements Document
Software Architectural and Detailed Design Documents
Software User's Guide/Operational Procedures Document
Data Management Plan
Software Acceptance and Test Procedures Document
Acceptance Test Reports
Source Code
Makefile
Scripts
Ancillary files used during processing and / or for QA
ReadMe to describe/define items in DAP

Table7-1. DAP Contents

~~7.3~~7.3 Appendix C: Ancillary Files

As noted in Section 5.3, specifically Table 5-5, of the I-SIPS-NSIDC ICD (423-41-57-11), I-SIPS delivers to NSIDC ~~10~~ 9 ancillary files delivered as products, i.e., each with its own ESDT descriptor file: GLAANC04, GLAANC08, GLAANC09, GLAANC20, GLAANC2~~5~~2, GLAANC2~~5~~6, GLAANC33, ~~GLAANC34~~, GLAANC037, andGLAANC39. In addition to these ~~10~~ 9 ancillary files, I-SIPS delivers to NSIDC ~~20~~ 11 ancillary files within DAPS. These 11 ancillary files are shown in Table 7-2.

File Type	Short Description	Comment on usage and NSIDC delivery	Frequency of delivery
GLAANC07	GLAS Coefficients and Constants	Deliver to NSIDC ~~Do deliver to NSIDC, but??? is this delivered as part of the DAP ? Still need a ESDT?~~	Seldom
GLAANC12	Digital Elevation Model	Deliver to NSIDC These are standard reference files and are delivered to NSIDC for completeness of the DAP. Users should contact original data providers for usage other than with the GSAS DAP. (GSAS = GLAS Science Algorithm System.) ~~Not delivered this a reference Standard, any reformat we will provide the utility. We do need to deliver the mask so ??? How do we ESDT ANC12 file 01?~~	Seldom
GLAANC13	Geoid	Deliver to NSIDC These are standard reference files and are delivered to NSIDC for completeness of the DAP. Users should contact original data providers for usage other than with the GSAS DAP. ~~Not delivered this a reference Standard~~	Seldom
GLAANC16	Load Tide Model	Deliver to NSIDC These are standard reference files and are delivered to NSIDC for completeness of the DAP. Users should contact original data providers for usage other than with the GSAS DAP. ~~Not delivered this a reference Standard~~	Seldom
GLAANC17	Ocean Tide Model	Deliver to NSIDC These are standard reference files and are delivered to NSIDC for completeness of the DAP. Users should contact original data providers for usage other than with the GSAS DAP. ~~Not delivered this a reference Standard~~	Seldom
GLAANC18	Standard Atmosphere	Deliver to NSIDC These are standard reference files and are delivered to NSIDC for completeness of the DAP. Users should	Seldom

		contact original data providers for usage other than with the GSAS DAP. ~~Not delivered this a reference Standard~~	
GLAANC19	Surface Type Class	Deliver to NSIDC	Seldom
GLAANC27	Regional mask	Deliver to NSIDC	Seldom
GLAANC30	Global aerosol categorization map	Deliver to NSIDC	Seldom
GLAANC31	Aerosol tropospheric classification map	Deliver to NSIDC	Seldom
GLAANC35	Ozone file	Deliver to NSIDC	Seldom
GLAANC45	Data file metadata templates	Deliver to NSIDC	
GLAANC45	Ancillry file metadata templates	Deliver to NSIDC	

Table 7-2. Ancillary Files Delivered in DAPS

~~7.4~~ 7.4 Appendix D: NOSE and Off-Nadir Pointing

The NOSE system will be used so that the EDG can select which granules contain data in a specific geographic region. ICESat is designed to fly its normal mission in a repeat orbit with a 183 day period. A special 8 day repeat orbit will be flown for calibration and validation after launch and as required during its lifespan. For nominal nadir pointing (off-nadir angle less than or equal to TBD deg), the 8-day and 183 day repeats will be divided into tracks (each track begins at the ascending node) such that one track is a complete revolution around the earth. Each track will be divided into 73 segments of approximately 5 degrees latitude each. The NOSE system will have the geographic coordinates of the polygon vertices defining each segment within each track. The metadata delivered with every granule will give the tracks covered in the granule and the segments within those tracks.

ICESat has the capability to point off-nadir to targets of opportunity and it is expected that there may be nominally 2 of these per orbit. When the off-nadir pointing is larger than TBD degrees, then the footprint location is far enough off from the reference groundtrack that a different scheme must be used within NOSE. For these situations, a set of tracks are defined that cover the whole globe where each track is a specific latitude band and the segments are a given longitude span within that latitude band.

~~7.5~~7.5 Appendix E: L0 Replacement Data Transfer Mechanics

Subject: EOS Data Gateway product request

Date: Fri, 21 Apr 2000 11:37:33 –0400(EDT)

From: wwwuser@harp.gsfc.nasa.gov

To: Suneel Bharwdaj

This is your order receipt. After your request was submitted,

the following responses were returned from the various data centers:

DATA CENTER: ECS-NSIDC

Order Tracking Number: 0000000747

STATUS/COMMENTS:

Order Received / Successful query; Query results returned.

CONTACT POINTS:

NSIDC User Services / University of Colorado

Campus Box 449

Boulder, CO, USA, 80309-0449

Phone: 303-492-6199 / Fax: 303-492-2468

Email: nsidc@kryos.colorado.edu

If your order status shows "failed", please contact the data center immediately.

YOUR ORDER SUMMARY

USER ADDRESS

Organization: ICESat Science Investigator-Led Process System

Email: Seneel@icesat2.gsfc.nasa.gov

Address: Bldg23 Room 111

Goddard Space Flight Center

Greenbelt, MD 20771

Phone: 301/286-4941

Affiliation: US

SHIPPING ADDRESS

Name: Suneel Bharwdaj

Email: Seneel@icesat2.gsfc.nasa.gov

Address: Bldg23 Room 111

Goddard Space Flight Center

Greenbelt, MD 20771

Phone: 301/286-4941

Affiliation: US

Phone: 301/286-4941

BILLING ADDRESS

Name: Suneel Bharwdaj

Email: Seneel@icesat2.gsfc.nasa.gov

Address: Bldg23 Room 111

Goddard Space Flight Center

Greenbelt, MD 20771

Phone: 301/286-4941

Affiliation: US

Phone: 301/286-4941

Ordered by: STANDARD MEANS (IMS PRODUCT REQUEST)

Data center: ECS-NSIDC

Item 001 Data granule: SC:GLA0CHT1.001:56235

Data set: GLAS/ICESAT L0 COMMAND AND TELEMETRY HARDWARE TELEMETRY # 1 (APID 20)

Ordering Option 1: SC: GLA0CHT1.001:56235

Item 001 Data granule: SC:GLA0CHT2.001:55407

Data set: GLAS/ICESAT L0 COMMAND AND TELEMETRY HARDWARE TELEMETRY # 2 (APID 21)

Ordering Option 1: SC: GLA0CHT1.001:55407

Cost: US $0.00

Format/Media: Native Granule: FtpPull: FILEFORMAT

TOTAL KNOWN COST (US): $0.00

Please note that this is the MINIMUM ESTIMATED COST for your order.

If cost information was unavailable for some of the products you requested

(as for some e-mail orders), OR if there are per-order shipping charges,

THE ACTUAL COST MAY BE HIGHER.

End of receipt.

Figure 1. Sample of order confirmation Email for GLAS Level 0 product order

Subject: ECS Notification

Date: Fri, 21 Apr 2000 09:45:00 -0600 (MDT)

From: CM SHARED (CM Code Delivery) <cmshared@n0ins01.nsidcb.ecs.nasa.gov>

To: Suneel Bharwdaj

Subject: ECS Notification

Thank you for using the Earth Observing System (EOS) Data Gateway.

For more information on your request please contact NSIDC User Services, and be sure to include your Order ID below in any correspondence to us.

NSIDC User Services

University of Colorado

Campus Box 449

Boulder, CO 80309-0449

Email: nsidc@nsidc.org

Phone: 303-492-6199

Fax: 303-492-2468

Instructions on retrieving your data:

1) ftp to FTPHOST specified below as anonymous

2) When prompted for password please type your email address

3) Once connected to the FTPHOST change directory to the FTPDIR specified below.

4) Retrieve the data using get or mget

++++++++++

ORDERID: 0000000747

REQUESTID: 0000000749

USERSTRING:

FINISHED: 04/21/2000 09:44:16

MEDIATYPE: FtpPull

FTPHOST: n0acg01u.ecs.nasa.gov

FTPDIR 0800000695bjCtlb

FTPEXPR: 4/24/01

MEDIA 1 of 1

MEDIAID: N0000819+

GRANULE: UR:10:DsShESDTUR:UR:15:DsShSciServerUR:13:[NSC:DSSDSRV]:18:SC:GLA0CHT1:174618

ESDT: GLA0CHT1.001

FILENAME: P2060021AAAAAAAAAAAAAA011221054844901.PDS

FILESIZE: 34944

FILENAME: P2060021AAAAAAAAAAAAAA011221054844900.PDS

FILESIZE: 384

FILENAME: P2060021AAAAAAAAAAAAAA011221054844901.PDS.met

FILESIZE: 42438

GRANULE: UR:10:DsShESDTUR:UR:15:DsShSciServerUR:13:[NSC:DSSDSRV]:18:SC:GLA0CHT2:55407

ESDT: GLA0CHT2.001

FILENAME: P2060021AAAAAAAAAAAAAA011221054843801.PDS

FILESIZE: 34944

FILENAME: P2060021AAAAAAAAAAAAAA011221054843800.PDS

FILESIZE: 384

FILENAME: P2060021AAAAAAAAAAAAAA011221054843801.PDS.met

FILESIZE: 42438

Figure 2. Email notification that order has been completed for GLAS Level 0 Product order

~~7.6~~7.6 Appendix F: Fielding User Questions

NSIDC user services staff will answer user questions about GLAS data that are directed to NSIDC. User services staff will consult documentation, e.g., DIFs and guide documents, and in-house GLAS data specialists, when such consultation is needed to answer users' questions about GLAS data, e.g., science-type questions. When referring to these resources doesn't yield an answer to a user's question, NSIDC will email the GLAS science team member most directly related to the subject of the user's question and copy Bob Schutz (email addresses at http://ltpwww.gsfc.nasa.gov/eib/glas_sci_team.html) and request support in fielding the user's question. Upon receiving an answer from the science team member, NSIDC will pass this information to the user and also post this question and answer pair on NSIDC's FAQ web site (http://www-nsidc.colorado.edu/daac/glas/faq.html). Questions about data processing and data format will be directed to I-SIPS, e.g., David Hancock.

7.7Appendix G: Workoff Plan

Issue Number	OA Section	Work-off Plan Task	Date Assigned	Date Complete	Actionee
1	2.2	I-SIPS Security Plan	Oct.		I-SIPS
2	2.2	SIPS Configuration Management Process Definition	Oct.		I-SIPS
3	6	Security info	Oct.		I-SIPS
4	App. A 7.1	Document current file naming convention	Oct.		I-SIPS